

## Evaluation of child and adolescent psychiatry consultations in a tertiary university hospital

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### ABSTRACT

**Objectives.** The aim of this retrospective study was to examine referral pathways to department of Child and Adolescent Psychiatry in a tertiary university hospital for consultation-liaison and to identify patterns associated with demographic characteristics of children, referral sources, the presenting problems, diagnoses and the treatments. **Methods.** The consultation demands from inpatient and outpatient clinics of our hospital between October 2015 and October 2016 were screened retrospectively. **Results.** Psychiatric consultations were demanded for 263 child and adolescent patients who were treated in inpatient and outpatient units for one-year period. The children consulted were primarily females (52.5%) and who were in 12 or older age group (62%). Children were referred mostly because of mood and anxiety related complaints. Major depressive disorder was the most common diagnosis. Children were referred mostly from the pediatric emergency service. The intensive care, oncology, hematology and endocrinology departments of pediatrics were also the common referral sources. Psychotropic medications were recommended for 22 percent of children. Psychotherapeutic interventions were conducted in approximately half of the children. **Conclusions.** Pediatricians have to pay an extra attention to female adolescents. Emergency service demands for suicide attempts are higher than the other departments and there is a need for more collaboration with emergency service. Future studies of child and adolescent psychiatry consultants need to be aware of the growing body of literature supporting the biopsychosocial model of understanding the process of adjustment to chronic childhood illness and the experience of hospitalization.

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**Keywords:** Consultation; liaison; psychiatry; child; adolescent

### Introduction

According to Lipowski [1], consultation-liaison psychiatry is the field of clinical psychiatry that involves all diagnostic, therapeutic, teaching and research activities for psychiatrists in the non-psychiatric parts of the hospitals.

There is a severe lack of child and adolescent psychiatrists in the United States [2] and is likely to remain present for the predictable future [3]. The availability of professionals specifically trained in the area of child and adolescent psychiatry to meet the

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high demand of services required is still a problem in all over the world. Although primary care providers usually refer children to child and adolescent psychiatry clinics for psychiatric treatment, significant barriers present to referral, including lack of available child and adolescent psychiatry specialists, insurance problems, appointment delays, and stigma [4].

High psychiatric disturbance rates have been seen in children admitted to pediatric clinics [5]. Chronic medical illness in childhood and adolescence period increases the psychiatric disturbance risk. Compared to healthy controls, rates of psychiatric disorder are up to four times greater in children with chronic physical illness [6, 7]. Emotional problems might complicate the management of organic pathologies [5]. Treating the psychiatric comorbidity of the physically ill child could facilitate the adjustment of the child to his/her illness [8].

Psychiatric disorders in physically ill children are more likely to occur when risk factors such as premorbid psychopathology, infancy age period, chronic illness and multiple hospitalizations, parents' inappropriate attitudes, and poor parent-child relationship are exist [9]. Child's developmental stage, social factors, such as the parents' response to the child's condition, and physiological issues, such as the characteristics of pain and nature of the chronic illness are known to be the factors that affect the child's psychosocial adjustment to his/her illness [10, 11].

Data about rationales for child and adolescent psychiatry consultation, psychiatric diagnosis and treatment to date is critical to better evaluate existing child needs and the current functioning of child and adolescent psychiatry services [12].

The aim of this retrospective study was to examine referral pathways to department of Child and Adolescent Psychiatry at our university hospital for consultation-liaison and to identify patterns associated with demographic characteristics of children, referral sources, the presenting problems, diagnoses and the treatments.

## Methods

This is a retrospective study of a sample including all inpatient and outpatient units of Ankara University School of Medicine up to the age of 20 who had a consultation with child and adolescent psychiatry department between October 2015 and October 2016.

Data about the child's age, gender, medical history, primary diagnosis, psychiatric evaluations, treatments were extracted from the patient file database. A total of 263 consultations were presented and retrospectively screened. The IRB/Ethics Committee had ruled that approval was not required for the study. Clinical diagnosis was based upon DSM IV-TR criteria [13].

The assessment of the child may require multiple interviews with the child, parents, service doctors, nurses and child's teacher as needed. In our department, treatment planning is made by the child and adolescent psychiatry team according the biopsychosocial approach for every child. Treatment recommendations include psychoeducation on medication and illness and diagnostic issues, physical exercise, relaxation techniques, medical therapy or psychological testing as needed. Supportive psychotherapy, preparation for hospitalization, surgery, transplantation and diagnostic procedures, arrangement of follow-up care, coping-strategies intervention, helping the patient/family communicate with medical staff and with each other, cognitive behavioral intervention, crisis intervention, grief intervention, therapeutic play, occupational therapy, behavioral modifications, group therapy, liaison, and arrangement of health reports of disabled children for special education are also provided by the child and adolescent psychiatry team as needed.

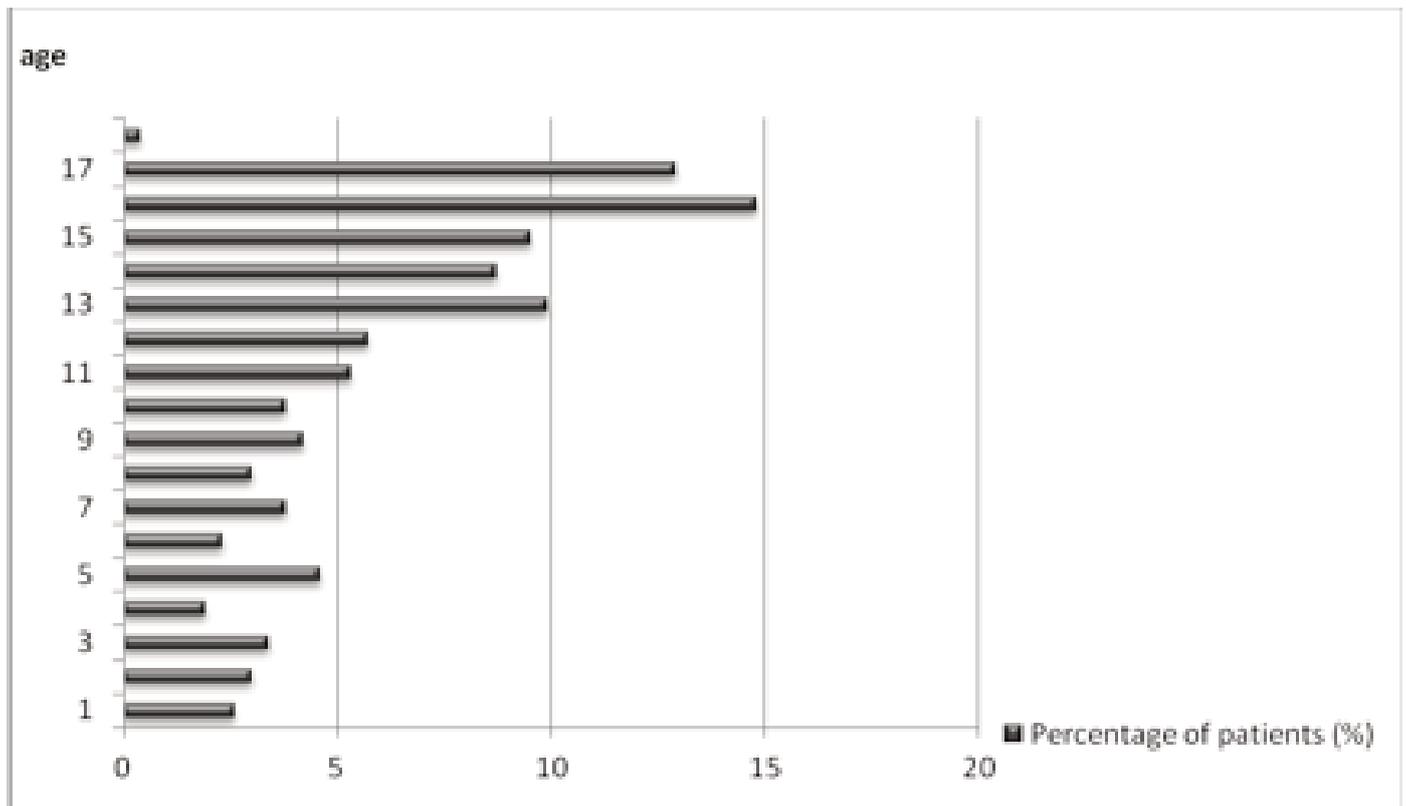
### *Statistical Analysis*

For the categorical variables, the descriptive statistics were calculated as frequencies. The categorical data were expressed as number (n) and percentage (%). All statistical analyses were performed using IBM SPSS Statistics 20.0 software (IBM, Armonk, NY, USA).

## Results

Psychiatric consultations were demanded for 263 child and adolescent patients who were treated in inpatient and outpatient units of our university hospital for one-year period. The mean age was 11.7 and the standard deviation was 4.77. There were 125 boys (47.5%) and 138 girls (52.5%) in our study.

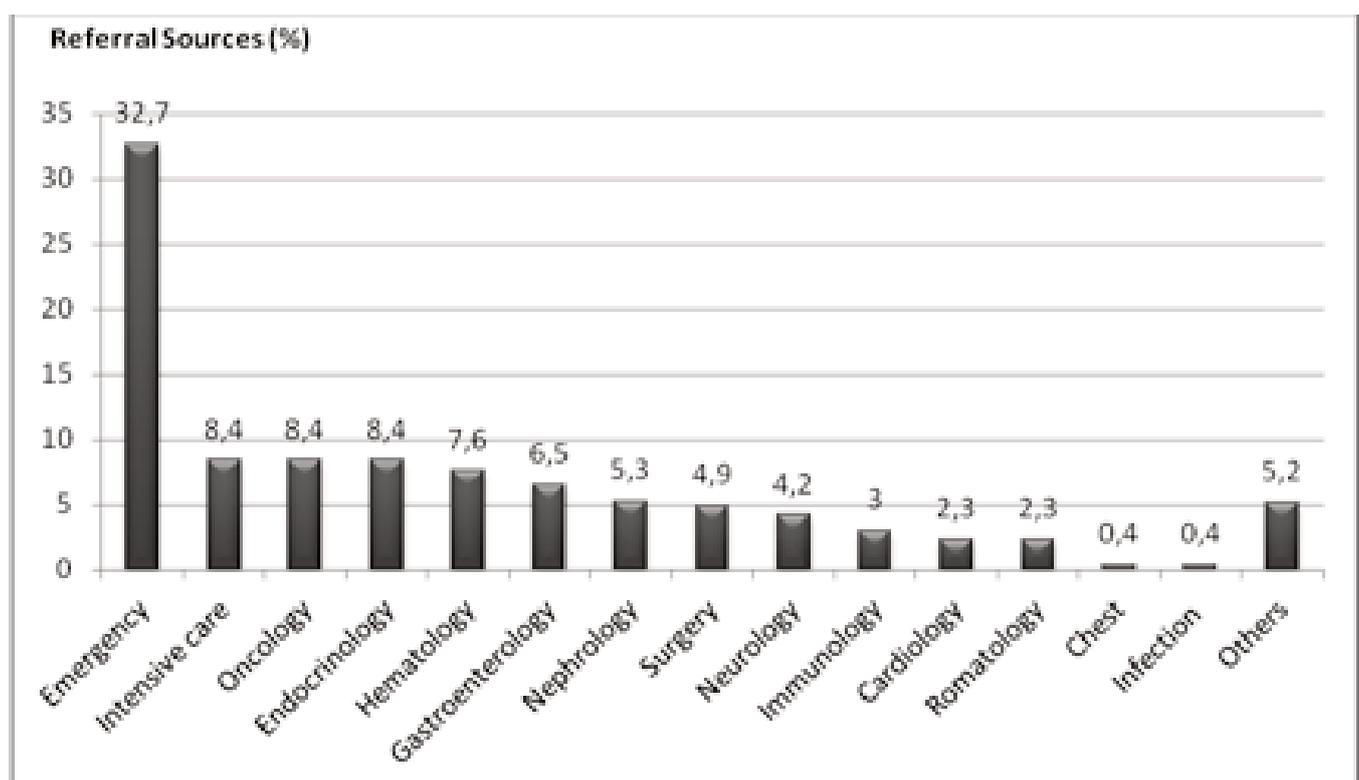
Figure 1 shows the percentage distribution of children ages. The overall frequency of referrals for the adolescent group (n=163, 62%) was greater than the other age groups.



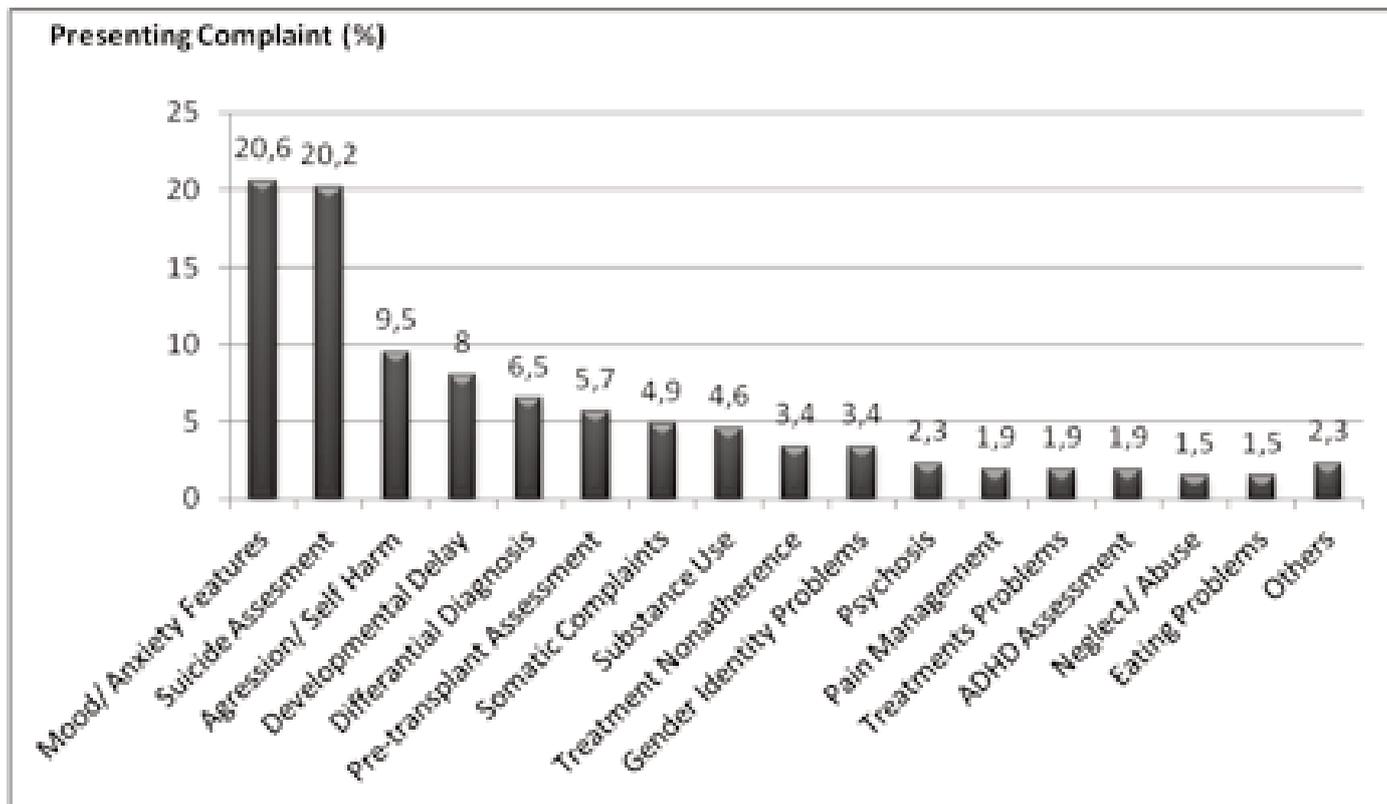
**Figure 1.** Distribution of the children according to ages

As shown in the Figure 2, children were referred mostly from the pediatric emergency service. The intensive care, oncology, hematology and endocrinology departments of pediatrics were also the common referral sources. Pediatric surgery was the

most common referral source from the surgery departments of our university hospital. The other surgery departments labeled as ‘others’ in Figure 2, consisted of brain surgery, orthopedic surgery, urology, plastic surgery and ophthalmology.



**Figure 2.** Distribution of the referral sources



**Figure 3.** Distribution of the presenting complaints of the children

Children were referred mostly because of mood and anxiety complaints. Half of the presenting complaints were consisted of mood/ anxiety problems, suicide attempts, aggression, disruptive behaviors and self-harm. The main complaints were presented in Figure 3.

There was a DSM-IV diagnosis for 188 out of a total of 263 children. There were ongoing psychiatric assessments and further evaluations for these 75 (28.5%) undiagnosed children. The diagnosis distribution is presented in Figure 4. Forty-seven (17.9%) cases were not qualified for a DSM-IV diagnosis. Major depressive disorder was the most common diagnosis given by the child adolescent psychiatrist. Approximately one fifth of children in our study were diagnosed as mood or anxiety disorders. Psychological assessment demand for determining the developmental delay or mental retardation in child who has a suggestive symptom was one the common referral reason. Developmental delay/mental retardation was detected in 9.5% of the children in our study.

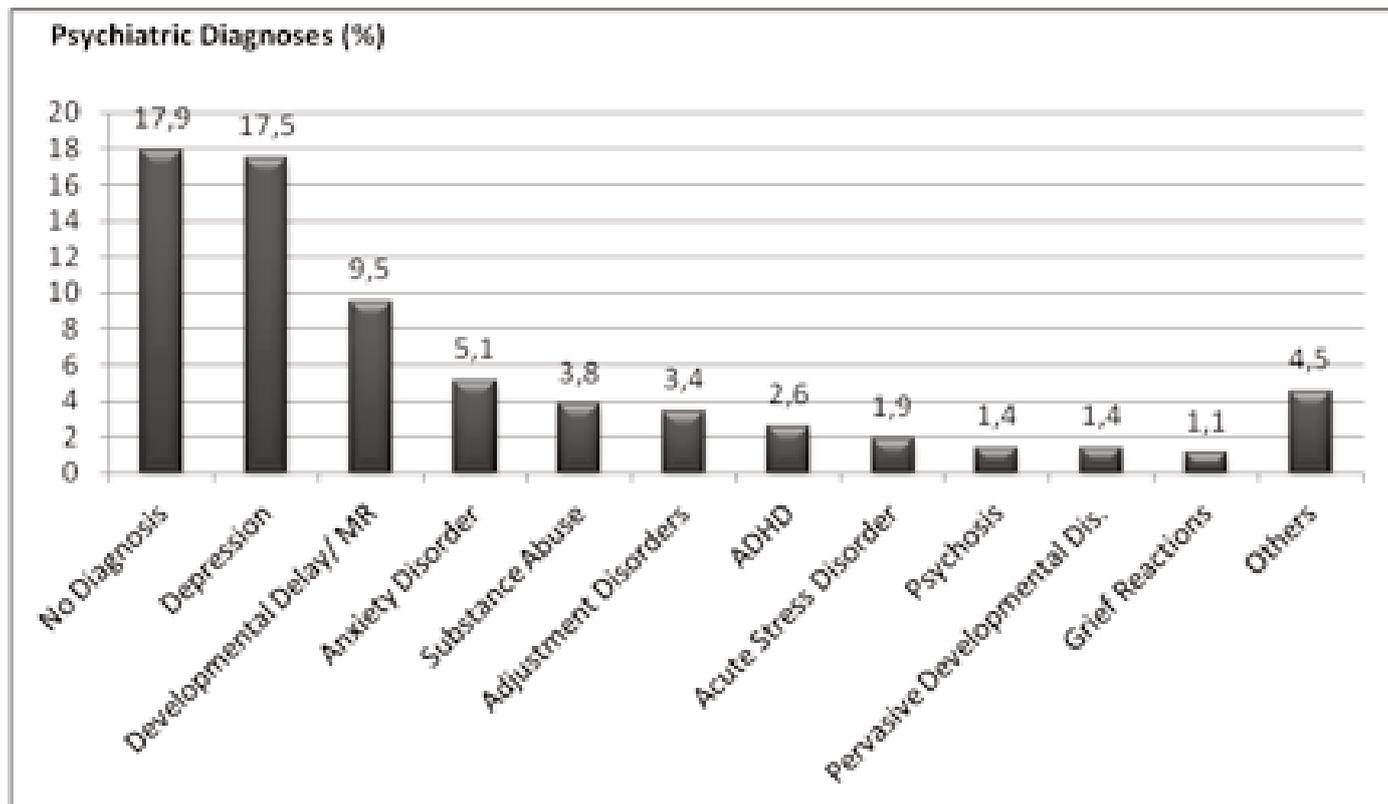
Of the group of 263 children, 46 (17.5%) were seen on more than one occasion by the child and adolescent psychiatrist. 58.7% of the multiple consultations were undertaken within 30 days and 28.3% of the multiple consultations were undertaken

within 31-90 days from the initial consultation.

In the light of the child and adolescent psychiatry consultations which were demanded in the study period, 127 (47%) cases were referred to follow-up sessions and to further evaluations like psychological testing and no medication was recommended for this group. Combined psychotropic medications with any kind of psychotherapeutic interventions (which were detailed in the method section) were conducted in 60 (22%) cases. Among these cases, selective serotonin reuptake inhibitors (SSRI) as a medication was suggested to 39 (65%) children and antipsychotic medication was suggested to 20 (7%) children and benzodiazepine medication was suggested to 1 (1.7%) child. Any kind of psychotherapeutic interventions without a psychiatric medication were conducted in 65 (23%) children. Eighteen (5.5%) children were referred to special education centers due to developmental delay/mental retardation. Ten (2.5%) children were referred to the inpatient psychiatry unit due to his/her persistent suicide ideation.

## Discussion

The aim of this study was to get an overview of the number and characteristics of child and adolescent



**Figure 4.** Distribution of the diagnoses of children given by child and adolescent psychiatry. ADHD=attention deficit hyperactivity disorder, MR=mental retardation

psychiatry consultations at our university hospital within one-year period and to determine the service property that was offered. In this retrospective study, we assessed the child and adolescent psychiatry consultations, demanded for 263 child and adolescent patients who were treated in inpatient and outpatient units of our university hospital for one-year period. Our study results showed that female adolescents were more likely to be referred to child and adolescent psychiatry clinic. The results from this study are parallel to the current literature [14-17]. This is of particular significance for mental health intervention, due to the increase in emotional and behavioral problems and the onset of psychiatric disorders that arise during adolescence [18]. Anxiety and depressive disorders are joined under the category of internalizing disorders, while aggressive behavioral disorders and attention deficit hyperactivity disorder are regarded as externalizing disorders. In our study, most of female adolescents had internalizing disorders. As for gender differences, previous studies showed that female adolescents have higher prevalence of internalizing disorders than male adolescents [19]. It has been reported that sex difference in internalizing problems is associated with sex differences in stress reactivity [20]. Cortisol secretion is closely related with age,

puberty, and sex [20]. Increased doses of basal cortisol and increased response to interpersonal stressors have been shown among adolescents with internalizing problems [20]. Furthermore, high doses of estrogen can augment stress response [20]. Abovementioned explanations seem to have roles in the vulnerability of female adolescents to external stressors [20].

Children were referred mostly because of their mood and anxiety complaints. Half of the presenting complaints were consisted of mood/anxiety problems, suicide attempts and aggression, disruptive behaviors and self-harm. The most common diagnosis was depression and the most common complaint was suicide attempt. This finding is parallel to the literature on the pediatric patients [21]. Suicide attempt age has been reported as 13 to 18 years [22, 23]. It is indicated that 50% of adult psychiatric disorders have their onset in adolescence period [24]. It was reported that mood disorders have shown low prevalence until the early teens followed by a roughly linear increase through late middle age [25]. Results of a national survey in which 144 pediatric child and adolescent psychiatry services in United States were included, showed that the majority of the child and adolescent psychiatry consultations have been demanded for depression and anxiety [21, 26]. Consistent with both national and

international large studies results, the majority of the referrals came from pediatric emergency services, general pediatrics, and pediatric hematology/oncology departments [14, 15, 21, 27]. In our study, child and adolescent psychiatry consultations which were demanded by pediatric endocrinology were higher than the previous studies [5, 14]. This result might be the reflection of the specialty collaboration due to the common gender identity council in which child and adolescent psychiatry and endocrinology both participate.

Aggression, disruptive behaviors and self-harm are commonly main features of agitated depression. In our sample, depression is the most common diagnosis. The routine physical activity of the child is precluded during the hospitalization. Long hospitalization may negatively influence the child and may cause aggression. Due to the abovementioned possible explanations, aggression, disruptive behaviors and self-harm were at the top places of the chief complaint list.

Developmental delay/mental retardation was one of the most referral causes. This result is parallel to the literature [14, 28]. Etiological agent of the disease may affect negatively the perception, attention and central nervous system of the chronically ill children in pediatric units. Exposure of the physical illness/ agent during the vulnerable time like intrauterine period can cause mental retardation. Furthermore, long hospitalization may cause absenteeism from school and sensory deprivation, and also may decrease the amount of information retrieval. These abovementioned possible causes can explain the high frequency rate of developmental delay/mental retardation diagnosis.

Collaboration need is extremely important for differential diagnosis of the patients. In our study, 6.5% of the child and adolescent psychiatry consultation demands were undertaken as a result of pediatrician's indecision about the diagnosis of his/her patient. Forty-seven (17.9%) of the children in our sample were not qualified for a DSM-IV diagnosis. This result is consistent with previous study results in our country [14, 29]. According to pediatricians' perspective, severity of a psychiatric symptom can be more important when dealing with a stressful situation.

In our clinic, treatment planning is considered according to the biopsychosocial approach for every child when dealing with chronic and life-threatening diseases. Therapeutic intervention starts with the

assessment. Sometimes the psychiatric intervention is limited to giving psycho education to the child and to his/her family about the illness. We play an important role in actions such as preparation for hospitalization, surgery, transplantation and diagnostic procedures of the child. Supportive psychotherapy, coping-strategies intervention, cognitive behavioral intervention, crisis intervention, grief intervention, therapeutic play behavioral modifications, individual therapy, occupational therapy, group therapy, liaison, and arrangement of health reports of disabled children for special education are also provided by the child and adolescent psychiatry team as needed.

Combined psychotropic medications with any kind of psychotherapeutic interventions (which were discussed above) were conducted in 60 (22%) cases. SSRI medication was suggested in two thirds of these cases. The rates of mood/anxiety disorders and suicide attempts were high in our sample. Mostly SSRIs were suggested as a psychotropic medication. This result is consistent with previous study results [14, 15]. Our psychotropic medication rate is relatively lower than the previous studies [21]. In literature, antidepressants are mainly chosen in self-poising attempts [30, 31]. This is consistent with our clinical experience. In the light of this reality and our clinical experience, our consultant team does not initially suggest antidepressants in these cases. We prefer to start the treatment with psychotherapeutic interventions for this special group and then add antidepressants after following visits. This can be the reason for our lower SSRI usage in instances of suicide attempt survivors. Any kind of psychotherapeutic interventions with or without a psychotropic medication were conducted in 125 (45%) children. Psychotherapeutic interventions were conducted in approximately half of the children. This ratio is similar to international study findings but higher than the rates of national study findings [14, 21]. It takes time to conduct any kind of psychotherapeutic interventions. One study result showed that 43% of consultation-liaison programs have reported inadequate staffing to meet the clinical need, and 42% have reported difficulties recruiting child psychiatry staff and faculty, consistent with the overall national lack of child and adolescent psychiatrists. For optimum child and adolescent psychiatry assessments, there has to be adequate educated staff to meet the expectations of children, families and the pediatricians. Aysev *et al.* [32] evaluated the child and adolescent psychiatry consultations of 115 child and adolescent patients who

were treated in inpatient and outpatient units of our university hospital between 1992-1993. When we compare our study result (n=263) with this previous study result (n=115), we see that the current consultation demand becomes 2.3 times higher than the mentioned year. Our result is parallel to the results of a large national study conducted in the United States [21]. It was indicated that the increased level of medical acuity and shorter lengths of stay have led to increased work demands, most of programs reporting an increase in the amount of consultation requests [21]. According to this study result, 57% of programs reporting an increase in clinical service requests over the past 5 years. Our finding is favorable for child and adolescent psychiatry and for children. This attitude could be the result of increased awareness of pediatricians about child and adolescent psychiatry and the increase in consultation demands. Most of the children in our study were seen on one occasion by a child and adolescent psychiatrist. The possible explanation of this finding could be the increased amount of consultation demands and limited time. The approximate ratio of pediatric departments' consultation demands to the surgery departments' consultation demands is 9:1 in our study. This finding is consistent with Aysev *et al.* [32] study finding of ratio 10:1. This outcome might be the result of the shorter length of hospitalization in surgery. Also this marked discrepancy in the referral rates between these departments might be related to the variation of the degree of awareness about child and adolescent psychiatry consultations.

#### *The Limitations of the Study*

Limitation of our study is the absent of follow-up process of the children and adolescents due to the retrospective study design. Further prospective studies are needed to highlight the psychopathologies of chronically ill children and to highlight the influences of hospitalization on children's psychology.

## Conclusions

To sum up our study results, child and adolescent psychiatry consultations were demanded mostly for female adolescents. Common psychiatric diagnoses among these children and adolescents were depression, developmental delay/mental retardation and anxiety disorders. Half of the presenting complaints were consisted of mood/ anxiety related

problems, suicide attempts, aggression, disruptive behaviors and self-harm. The majority of referrals came from pediatric emergency services, general pediatrics, pediatric hematology/oncology and pediatric endocrinology departments. Psychotherapeutic interventions were conducted in approximately half of the children. The most common psychotropic medication was SSRI medication and it was suggested in two thirds of the cases in our study. Our study has given some understanding of the current approach. The findings have highlighted that it appears difficult to cover all pediatric consultations by consultation-liaison services. Identifying children "at risk" early in the child's hospitalization may help reduce the psychiatric morbidity and prevent behavioral disturbances that interfere with medical treatment and recovery [33].

Pediatric consultation-liaison is a growing aspect of psychiatric divisions in academic field, clinical care for children and families, and support for pediatric staff. It is indicated that future studies of child and adolescent psychiatry consultants need to be aware of the growing body of literature supporting the biopsychosocial model of understanding the process of adjustment to chronic childhood illness and the experience of hospitalization [34]. Providing sustainable resources to support staff training, inter-professional education, evaluation strategies and research is critical. Further studies are needed to understand how to promote these important services within the rapidly changing healthcare system.

#### *Conflict of interest*

The authors disclosed no conflict of interest during the preparation or publication of this manuscript.

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